

RESPONSE AND REQUEST FOR RECONSIDERATION

Please enter the amendments as shown above. Applicants have amended Claim 1 and canceled Claims 9 and 10. The limitation of Claim 10 has been inserted into Claim 1. Claim 1, as amended, clearly identifies that “*the detergent of (d) has a Total Base Number of up to about 30.*” Support for this amendment can be found in cancelled claim 10 and in the specification at page 13, line 9. Applicants request the Examiner to reconsider the present application in view of the above amendments and following remarks.

Claims 1-14 and 16-21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Palazzotto et al (US. 6,642,191) in view of L’Heureux (US 6,455,477) or Chamberlin (US 5,422,02). Additionally, Claim 15 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Palazzotto in view of L’Heureux or Chamberlin and further in view of Tipton et al (US 5,354,485). Applicants respectfully traverse these rejections.

The Applicants’ response to the above mentioned rejection has been set forth in their response dated August 22, 2006, which is incorporated by reference.

In the pending Office Action the Examiner has maintained that the Declaration by Virginia Carrick dated 8/21/2006 is insufficient to establish unexpected or surprising results for the present invention because the data is not reasonably commensurate in scope with the claimed invention. Additionally, the Examiner maintains that the Applicants has not established criticality for the presently claimed range “up to about 100” because the comparison, in the Declaration, between the detergents with a TBN of 10 those with a TBN of 300 are not within the scope of the claimed invention.

In light of the Examiner’s comments in the pending Office Action, the Applicants have amended Claim 1 to limit the detergent to a TBN of “*up to about 30*” on an oil free basis. Additionally, the Applicants have submitted a corrected Declaration (see Declaration submitted by Virginia Carrick dated April 5, 2007). The data in this corrected Declaration is now reasonably commensurate in scope with the claimed invention. Note the Carrick Declaration dated 8/21/2006 contained an error related to the reported TBN values of the detergents. The Carrick Declaration dated April 5, 2007 was submitted to correct the error related to the TBN values of the detergents.

Carrick's corrected Declaration (dated April 5, 2007) clearly demonstrates that differences in lubricant composition performance are shown when using various detergents. Specifically, the data in Table 1 of the Declaration, which is reproduced below, shows that, in the Panel Coker Test, a lubricant composition containing a 32 TBN calcium sulfonate detergent (Samples A1 and A4) outperforms a lubricant composition containing a high TBN calcium sulfonate detergent (Samples A2 and A5), and a lubricant composition containing high TBN calcium phenate detergent (Samples A3 and A6). This data found in Table 1 is clearly commensurate within scope of the claimed invention and demonstrates unexpected results in performance when different detergents are utilized in a lubricant composition.

Additionally, the data found below in Table 2 disclosed in the corrected Carrick Declaration (dated April 5, 2007), demonstrates that low-ash lubricant formulations are not equal in minimizing deposit formation and it would not be obvious to lower the amount of ash delivered to a lubricant formulation and expect to minimize deposit formation. Table 2 compares formulations with identical percent ash values, that is, 0.17 wt % of ash delivered to the lubricant composition. Example 1(b), which uses a high TBN detergent, shows worse performance in the Panel Coker Test, that is, more deposits, compared to Example 1(a), which uses a 32 TBN detergent. This data found in Table 2 is clearly commensurate within scope of the claimed invention and demonstrates that: (1) lubricant compositions with low ash values do not necessarily minimize deposit formation and (2) in lubricant formulations with low ash values (less than 0.2), detergent selection affects performance. Thus, it would not be obvious that lower ash would give lower engine deposits. There is no teaching, suggestion or motivation in Palazzotto to use a low TBN detergent, that is, a Total Base Number of up to about 30, to deliver low ash to a lubricant composition. In contrast, the Applicants' present invention teaches, that when the lower ash is delivered by a low TBN detergent (Total Base Number of up to about 30) the performance is achieved. For the above mentioned reasons, Applicants respectfully submit that the claimed invention is novel and not suggested by or obvious from the cited art and rejection should be withdrawn.

Note: The TBN values for the detergents in both Tables below are reported on an oil free basis.

Table 1: Palazzotto et al. Comparative Sample A

6,642,191	Sample A1	Sample A2	Sample A3	Sample A4	Sample A5	Sample A6
Group II base oil	100	100	100	100	100	100
Succinimide dispersant A	3.3	3.3	3.3			
Succinimide dispersant B				3.3	3.3	3.3
Low TBN Ca sulfonate detergent (TBN = 32)	3.4			3.4		
High TBN Ca sulfonate detergent (TBN = 517)		3.4			3.4	
High TBN Ca phenate detergent (TBN = 418)			3.4			3.4
zinc dithiophosphate	0.38	0.38	0.38	0.38	0.38	0.38
3,5-di-t-butyl 4-hydroxy phenol propionate antioxidant	0.91	0.91	0.91	0.91	0.91	0.91
foam inhibitor	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Percent Ash*	0.4	1.4	1.1	0.4	1.4	1.1
Panel Coker Deposit Test, Universal Rating (higher is better)	90	78	45	94	70	43

Note: Except for the Panel Coker results all values are presented in weight percent. Additionally, all the above components/ingredients contain conventional amounts of diluent oil.

Note: Succinimide dispersant A is a low molecular weight succinimide dispersant containing a condensed amine.

Note: Succinimide dispersant B is a high molecular weight succinimide dispersant.

*Note: Percent Ash is measured on the finished lubricating oil of Sample A1-A6.

Table 2:

	Example 1(a)	Example 1(b)
Group II base oil	100	100
Succinimide dispersant A	4.24	4.24
Low TBN Ca sulfonate detergent (TBN = 32)	2	
High TBN Ca sulfonate detergent (TBN = 517)		0.42
ashless antiwear	0.50	0.50
3,5-di-t-butyl 4-hydroxy phenol propionate antioxidant	1	1
Foam inhibitor	0.007	0.007
Percent Ash	0.17	0.17
Panel Coker Deposit Test, Universal Rating (higher is better)	92	61

Note: Except for the Panel Coker results all values are presented in weight percent. Additionally, all the above components/ingredients contain conventional amounts of diluent oil. Note: Succinimide dispersant A is a low molecular weight succinimide dispersant containing a condensed amine.

Note: ashless antiwear agent is TPP (tri-phenyl phosphite)

Note: Example 1(a) is an example of the present invention.

*Note: Percent Ash is measured on the finished lubricating oil of Examples 1(a) and 1(b).

The data presented in Carrick Declaration (dated April 5, 2007) is commensurate in scope with the present invention. For the above mentioned reasons along with the reasons set forth in the Applicants' response dated August 22, Applicants respectfully submit that the claimed invention is novel and not suggested by or obvious from the cited art and rejection should be withdrawn.

Additionally, in contrast to the Applicants' present invention, neither L'Heureux nor Chamberlin teaches sulfonate or phenate detergent with a TBN of up to about 30. L'Heureux teaches a sulfonate or phenate detergent with a TBN of 200 or less (see column 2 lines 59-62), while Chamberlin teaches a sulfonate detergent with a TBN less than about 110 (see column 17 (lines 47-48). There is no teaching, suggestion, or motivation in either L'Heureux or Chamberlin to use a detergent with a TBN of up to about 30. Therefore, it would not be obvious to one of ordinary skill from the teachings of L'Heureux or Chamberlin to use a detergent with a TBN of up to about 30 in a lubricant composition for use in a two-cycle engine.

In light of the above arguments, which highlights the deficiency of Palazzotto; L'Heureux, Chamberlin, and Tipton are no longer relevant prior art. Applicants respectfully submit that the claimed invention is novel and not suggested by or obvious from the cited art and the rejection should be withdrawn.

For the foregoing reasons it is submitted that the present claims are in condition for allowance. The foregoing remarks are believed to be a full and complete response to the outstanding office action. Therefore an early and favorable reconsideration is respectfully requested. If the Examiner believes that only minor issues remain to be resolved, a telephone call to the Undersigned is suggested.

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Any required fees or any deficiency or overpayment in fees should be charged or credited to The Lubrizol Corporation Deposit Account No. 12-2275.

Respectfully submitted,
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